

Serial No.: 10/623,005
Docket No.: 200309793-1

2

LISTING OF CLAIMS

1. (previously presented) A method for free-form fabrication of a solid three-dimensional object, comprising:

a) ink-jetting a first ink-jetable composition including a reactive build material and a second ink-jetable composition including a curing agent separately onto a substrate such that contact between the reactive build material and the curing agent occurs, thereby resulting in a reaction that forms a solidifying composition;

b) repeating the ink-jetting step such that multiple layers of solidifying composition are accrued, wherein said multiple layers are successively bound to one another to form the solid three-dimensional object; and

c) supporting at least a portion of the solidifying composition with an ink-jetable removable material,

wherein the multiple layers are formed and accrued by an interleaving process.

2. (original) A method as in claim 1, wherein the substrate is a previously deposited solidifying composition.

3. (canceled).

4. (original) A method as in claim 1, wherein first ink-jetable composition is underprinted with respect to the second ink-jetable composition.

5. (original) A method as in claim 1, wherein the first ink-jetable composition is overprinted with respect to the second ink-jetable composition.

6. (original) A method as in claim 1, wherein the first ink-jetable composition and the second ink-jetable composition are printed substantially simultaneously on the substrate.

7. (original) A method as in claim 1, wherein the solid three-dimensional object, once substantially solidified, is highly cross-linked.

Serial No.: 10623,005
Docket No.: 200309793-1

3

8. (original) A method as in claim 1, wherein the reactive build material is an epoxy, and the curing agent includes molecules containing at least two active hydrogens for reacting with the epoxy to form the solidifying composition.

9. (original) A method as in claim 1, wherein the reactive build material includes an isocyanate or polyisocyanate, and the curing agent includes an alcohol or polyol.

10. (original) A method as in claim 1, wherein the reactive build material includes a functionalized silicone, and the curing agent is configured to react with the functional group on the silicone.

11. (original) A method as in claim 1, wherein the first ink-jettable composition and the second ink-jettable composition each have a viscosity which is less than 70 cP at a temperature less than 200°C.

12. (original) A method as in claim 1, further comprising the step of adding a colorant to at least one of the first ink-jettable composition and the second ink-jettable composition.

13. (previously presented) A system for free-form fabrication of solid three-dimensional objects, comprising a first ink-jettable composition including a reactive build material, a second ink-jettable composition including a curing agent, and a removable material, said removable material being ink-jettable, said solidifying composition being configured to become chemically bound to subsequently applied solidifying compositions; and an ink-jet dispensing system configured for separately containing and dispensing the first ink-jettable composition and the second ink-jettable composition, wherein the first ink-jettable composition and the second ink-jettable composition are configured to be dispensed and accrued by an interleaving process, and wherein upon dispensing, the first ink-jettable composition and the second ink-jettable composition are configured to come in contact.

Serial No.: 10/623,005
Docket No.: 200309793-1

4

14. (original) A system as in claim 13, wherein the solidifying composition, once substantially solidified, is highly cross-linked.

15. (original) A system as in claim 13, wherein the reactive build material is an epoxy, and the curing agent includes molecules having at least two active hydrogens for reacting with the epoxy to form the solidifying composition.

16. (original) A system as in claim 13, wherein the reactive build material includes an isocyanate or polyisocyanate, and the curing agent includes an alcohol or polyol.

17. (original) A system as in claim 13, wherein the reactive build material includes a functionalized silicone, and the curing agent is configured to react with the functional group on the silicone.

18. (original) A system as in claim 13, wherein the first ink-jettable composition and the second ink-jettable composition each have a viscosity which is less than 70 cP at a temperature less than 200°C.

19. (original) A system as in claim 13, wherein at least one of the first ink-jettable composition and the second ink-jettable composition includes a colorant.

20. (original) A system as in claim 13, further comprising a third ink-jettable composition and a fourth ink-jettable composition, wherein the first ink-jettable composition further includes a cyan colorant, the third ink-jettable composition includes a reactive build material and a magenta colorant, and the fourth ink-jettable composition includes a reactive build material and a yellow colorant.

21. (original) A system as in claim 13, further comprising a third ink-jettable composition and a fourth ink-jettable composition, wherein the second ink-jettable composition further includes a cyan colorant, the third ink-jettable composition includes a curing agent and a magenta colorant, and the fourth ink-jettable composition includes a curing agent and a yellow colorant.

22. (previously presented) A solid three-dimensional object, comprising multiple layers of a solidifying composition bound to one another, each of said multiple layers formed and accrued using by an interleaving process by contacting a first ink-jettable composition containing a reactive build material with a second ink-jettable composition containing a curing agent, said curing agent being reactive with the reactive build material such that the solidifying composition is formable, said solid three-dimensional object including cyan, magenta, and yellow colorant.

23. (original) A solid three-dimensional object as in claim 22, wherein the solidifying composition, once substantially solidified, is highly cross-linked.

24. (original) A solid three-dimensional object as in claim 22, wherein the reactive build material is an epoxy, and the curing agent includes molecules having at least two active hydrogens for reacting with the epoxy to form the solidifying composition.

25. (original) A solid three-dimensional object as in claim 22, wherein the reactive build material includes an isocyanate or polyisocyanate, and the curing agent includes an alcohol or polyol.

26. (original) A solid three-dimensional object as in claim 22, wherein the reactive build material includes a functionalized silicone, and the curing agent is configured to react with the functional group on the silicone.

27. (canceled).